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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,074	02/26/2002	Tetsuo Kuwabara	1232-4830	1418

27123 7590 07/13/2004

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EXAMINER	
NGUYEN, NGOC YEN M	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,074	KUWABARA, TETSUO	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,12,13 and 18-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 12-13, 18-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

In Applicants' response, Applicants have requested to cancel claims 2-11 and 13-17, however, in the "Listing of Claims", claim 13 is listed as being "currently amended" and "cancelled" at the same time. Applicants are requested to clarify whether claim 13 is intended to be pending or cancelled.

In this office action, it is assumed that claim 13 is pending.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 20, 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no sufficient support for "the first mixture contains a scavenger of 0.0005 to 0.05 mol%" as required in the instant claim 20. Applicants have pointed out that support can be found on page 25, lines 10-11, however, such range for the scavenger is for the annealing step (note box "1600" in Figure 1) not for the first mixture (which is box "1100" in Figure 1). It is noted that such range is also disclosed on page 23, lines 7-8, however, this is for the "growth" step (box "1500"), not for the fist mixture.

There is no sufficient support for "to promote removal of a substance *adhered* to the mixture" as required in the instant claim 23. Applicants have pointed out support on page 17, lines 5-12, however, it is only disclosed "to thereby accelerate removal of moisture molecules and other *absorbed* contaminants".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 12-13, 18-23 are rejected under 35 U.S.C. 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oba et al (6,342,312).

Oba '312 discloses a process for producing calcium fluoride crystal. Raw calcium fluoride powder and a scavenger are mixed. Examples of preferable

scavengers include Zn fluoride, Bi fluoride, Na fluoride and Li fluoride (note column 6, lines 16-36). The mixture of calcium fluoride and the scavenger is subjected to a purification step and the purified mixture is then subjected to a growing step, followed by an annealing step, a shaping step (note column 6, line 37- column 7, line 58 and Figure 2).

The amount of the scavenger preferably ranges from 0.05 mol% to 5.00 mol% (note column 12, lines 12-13).

As disclosed in the instant specification, page 6, line 22 to page 7, line 9, because the quantities of scavenger used in the claimed invention, i.e. 0.001 mol% to 0.1 mol%, causes smaller residue of scavenger, impurities contained in the CaF_2 crystal and crystal defect (particularly, transition defect) are reduced, such that the provision of quality of CaF_2 is enabled and page 11, lines 13-14, crystal defect is disclosed as being the same as transition density.

Oba '312 does not specifically disclose the transition density or the dispersion of transition density of the calcium fluoride product, however, since Oba '312 uses the same amount of scavenger in the purification step as in the claimed invention, (it should be noted that the lower value 0.05 mol% as disclosed in the Oba '312, for the amount of scavenger used, is well within the disclosed range on page 6 of the instant specification), the product of Oba '312 would inherently have the same properties as the claimed product, including the transition density and the dispersion of transition density.

The product of Oba '312 anticipates the claimed product.

Alternatively, for the product by process limitations, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see In re Brown, 173 U.S.P.Q 685, and In re Fessmann, 180 U.S.P.Q. 324.

Claims 1, 12-13, 18-23 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sakuma et al (6,377,332).

Sakuma '332 discloses an optical member for photoligraphy made of a calcium fluoride crystal exhibiting an internal transmittance of 99.5%/cm or greater with respect to light emitted from an F_2 laser (i.e., 157 nm) (note claim 1).

From Table 1, the internal transmittance can be as high as 99.9 +/- 0.3 or 99.8 +/- 0.2. In the process of Sakuma '332, fluorinating agent such as lead fluoride is considered the same as the scavenger as disclosed in the claimed invention.

Sakuma '332 does not specifically disclose the transition density or the dispersion of transition density, however, since the product of Sakuma '332 is subjected to a purification step using a scavenger as in the claimed invention and since the product of Sakuma '332 has high internal transmittance as that of the claimed product, the transition density and the dispersion of transition density of the product of Sakuma '332 would inherently be the same as those of the claimed product.

The product of Sakuma '332 anticipates the claimed product.

Alternatively, for the product by process limitation, see In re Fessmann, In re Brown as stated above.

Applicant's arguments filed April 5, 2004 have been fully considered but they are not persuasive.

Applicants argue that the instant application claims priority to Japanese application serial no 2001-051027, which was filed on 2/26/2001 and Oba is not available as a reference under 35 USC 102 (a).

The claim to the JP priority application is noted, however, no certified translation was received to perfect such claim.

Applicants further note Oba is assigned to the same assignee as the instant application.

However, Applicants did not clearly state that the instant application and the Oba reference were commonly assigned "at the time the invention was made".

Applicants argue that Oba and Sakuma fail to teach, disclose or suggest all of the elements of Applicant's amended claim 1.

Even though Oba and Sakuma do not explicitly disclose the transition density or the dispersion of transition density, however, as stated in the above rejection, based on the disclosure of the applied references, these properties are expected to be inherent. Applicants have not pointed out any deficient in such assumption.

Applicants argue that Oba and Sakuma do not teach, disclose or suggest that a baking process should be carried out after the raw material and the scavenger are mixed.

All Applicants' claims are drawn to a product. For product-by-process limitation, note In re Fessmann, In re Brown as stated above.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stan Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.

Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
July 12, 2004